PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

REC'D 0 9 MAR 2004
WIPO   PCT

Applicant's or agent's file reference 78258053/CJC	**FOR FURTHER ACTION**	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416).

International Application No. PCT/AU2003/000937	International Filing Date *(day/month/year)* 25 July 2003	Priority Date *(day/month/year)* 29 July 2002

International Patent Classification (IPC) or national classification and IPC

Int. Cl. [7]   G06F 9/45

Applicant

INTERAD TECHNOLOGY LIMITED et al

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1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of **3** sheets, including this cover sheet.

   ☐ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

   These annexes consist of a total of   sheet(s).

3. This report contains indications relating to the following items:

   I   ☒ Basis of the report

   II   ☐ Priority

   III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

   IV ☐ Lack of unity of invention

   V   ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

   VI ☐ Certain documents cited

   VII ☐ Certain defects in the international application

   VIII ☐ Certain observations on the international application

Date of submission of the demand 13 February 2004	Date of completion of the report 26 February 2004
Name and mailing address of the IPEA/AU AUSTRALIAN PATENT OFFICE PO BOX 200, WODEN ACT 2606, AUSTRALIA E-mail address: pct@ipaustralia.gov.au Facsimile No. (02) 6285 3929	Authorized Officer **M. D. HOLLINGWORTH** Telephone No. (02) 6283 2024

Form PCT/IPEA/409 (Cover sheet) (July 1998)

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

I. Basis of the report

1. With regard to the elements of the international application:*

   [X] the international application as originally filed.

   [ ] the description, pages , as originally filed,

   pages , filed with the demand,

   pages , received on with the letter of

   [ ] the claims, pages , as originally filed,

   pages , as amended (together with any statement) under Article 19,

   pages , filed with the demand,

   pages , received on with the letter of

   [ ] the drawings, pages , as originally filed,

   pages , filed with the demand,

   pages , received on with the letter of

   [ ] the sequence listing part of the description:

   pages , as originally filed

   pages , filed with the demand

   pages , received on with the letter of

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item. These elements were available or furnished to this Authority in the following language which is:

   [ ] the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).

   [ ] the language of publication of the international application (under Rule 48.3(b)).

   [ ] the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

   [ ] contained in the international application in written form.

   [ ] filed together with the international application in computer readable form.

   [ ] furnished subsequently to this Authority in written form.

   [ ] furnished subsequently to this Authority in computer readable form.

   [ ] The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

   [ ] The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

4. [ ] The amendments have resulted in the cancellation of:

   [ ] the description, pages

   [ ] the claims, Nos.

   [ ] the drawings, sheets/fig.

5. [ ] This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

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* *Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).*

** *Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report*

	International application No.
	PCT/AU2003/000937

V.   Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	**1-24**		**YES**
	Claims			**NO**
Inventive step (IS)	Claims	**1-24**		**YES**
	Claims			**NO**
Industrial applicability (IA)	Claims	**1-24**		**YES**
	Claims			**NO**

2. Citations and explanations (Rule 70.7)

- D1: US 5,911,070 A (SOLTON et al), 8 June 1999
- D2: US 6,269,475 B1 (FARREL et al), 23 July 2001

NEW CITATIONS:

- D3: US 6,502,239 B2 (ZGARBA et al), 31 December 2002
- D4: *Rational Rose 2000e Using Rose J*, March 2000
  (in particular, chapter 4, entitled *Reverse Engineering with Rational Rose J*)
  retrieved from the internet:
  http://www.vico.org/aRecursos/Rational/Rose_java.pdf
- D5: objectiF® Specials: *Reverse Engineering from Java™ Byte Code with objectiF®*, January-March 2001, and *Round Trip Engineering with a Direct Connection to Jbuilder*, January 2002
  retrieved from the internet:
  http://download.microtool.de/mT/pdf/objectiF/01/ob_javabytecode.pdf
  http://download.microtool.de/mT/pdf/objectiF/01/rte_jbuilder.pdf
- D6: *Smart Development Environment for JBuilder®, Version 1.0: User's Guide*
  (in particular, chapter 3, entitled *Incremental Round-trip Engineering*)
  retrieved from the internet:
  http://www.visual-paradigm.com/content/product/sde/sdejb/sdejbUserGuide/pdf/sdejb_user_guide.pdf
- D7: Nickel, U. et al, *The FUJABA Environment*
  Proc. 22nd International Conference on Software Engineering, 2000, pp. 742-5
- D8: Lengyel, L. et al, *Supporting Round-Trip Engineering in Modeling Environments with the Application of Meta-Modeling Techniques*
  retrieved from the internet:
  http://www.aut.bme.hu/~tihamer/research/agsi/papers/round_trip_031001.pdf

The above documents represent the closest available prior art. They illustrate that the concept of round-trip engineering of software in a visual software development environment is well known, per se. Most of the features of the independent claims define such a round-trip visual software development method. However, the claims all include the limitation that conversion between visual and code representations is performed using an intermediate byte-code representation. This feature is seen to be novel, and to involve an inventive step over the above disclosures. Document D8 describes an XML-based language, instead of byte code, as an intermediate representation between source code and visual model. While documents D4 and D5 disclose the reverse engineering of Java byte code into a visual representation, they do not describe the further use of byte code as an intermediary representation to facilitate round-trip engineering.